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Original Research Paper

Radio-Diagnosis

A CASE OF PORTOVENOUS GAS SECONDARY TO NEAR COMPLETE CELIAC ARTERY OCCLUSION .

Dr Ramesh Goud	Assistant Professor.
Dr Rohith Reddy	Junior Resident .
Dr. Shreya.P	Junior Resident .

KEYWORDS :

CASE DESCRIPTION

A 50-year-old male presented with severe abdominal pain for five days. There was no history of trauma or prior abdominal surgery. On examination, the patient was in distress and exhibited diffuse abdominal tenderness. Laboratory investigations revealed metabolic acidosis and elevated serum lactate levels.

A contrast-enhanced CT (CECT) of the abdomen and pelvis was performed with thin (1 mm) axial slices from the dome of the diaphragm to the pubic symphysis. The scan demonstrated near-complete occlusion of the celiac trunk and superior mesenteric artery (SMA) branches, with atherosclerotic wall calcifications and an eccentric non-calcified thrombus within the upper abdominal aorta.

Air was noted within the portosplenic venous system, including the superior mesenteric vein, splenic vein, and SMA branches, consistent with porto-mesenteric venous gas. Additional air was seen within the walls of the stomach, duodenum, and proximal jejunum, accompanied by reduced mural enhancement, suggestive of ischemic bowel. Scattered air pockets were also identified along the SMA branches and omental vessels.

Visceral hypoperfusion was evident, with reduced enhancement of the liver, pancreas, and spleen. There was no significant ascites. Incidental findings included right mild hydronephrosis secondary to a 10 mm pelvi-ureteric junction calculus, and an expansile lytic lesion involving the S5 segment of the sacrum.

Despite aggressive supportive measures, the patient's condition deteriorated rapidly, and he succumbed to multiorgan failure secondary to extensive mesenteric ischemia.

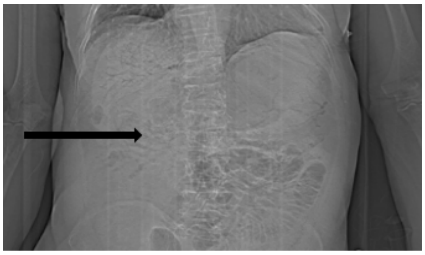
DISCUSSION AND IMAGING

Mesenteric ischemia is a life-threatening condition caused by inadequate blood flow to the intestines, commonly due to arterial occlusion. Simultaneous occlusion of both the celiac artery and SMA is uncommon but catastrophic, leading to extensive bowel necrosis and visceral ischemia. The CECT plays a pivotal role in diagnosing vascular occlusion and its complications. Typical findings include bowel wall hypoenhancement, pneumatosis intestinalis, porto-mesenteric venous gas, and evidence of vascular occlusion. Early recognition is vital as prognosis worsens once bowel necrosis sets in. In this patient, the extensive gas within the portal venous system and visceral ischemia indicated a terminal stage of mesenteric infarction. This case highlights the importance of recognizing subtle imaging clues in ischemic bowel and understanding that vascular compromise of both celiac and SMA territories is usually fatal without immediate intervention.

CONCLUSION

Porto-mesenteric venous gas is an ominous radiologic sign often associated with bowel ischemia.CT imaging is crucial in timely diagnosis, helping guide surgical or medical management. In cases of dual vascular occlusion involving the celiac and superior mesenteric arteries, the prognosis remains poor, emphasizing the need for early vascular assessment in high-risk individuals.

LEGENDS:



There is a branching pattern of gas projected over the liver (arrow) – this could either represented portal venous gas or gas in the biliary tree (pneumobilia). Subsequent CT shows a large amount of gas in portal vein branches in the liver.

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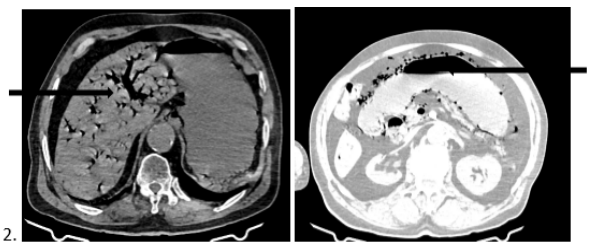

2. Axial view of abdominal/pelvic CT scan showing extensive hepatic portal venous gas and pneumatosis intestinalis (arrows).

3. Above image describes atheratous wall calcifications in the celiac artery(plain CT image 3) and showing no enhancement on contrast(image 4)—suggestive of thrombosis.

4.

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